

Best Practices in Using Technology to Teach Physics

Tuesday, Jan 11, 2005 10:30 - 12:30 AM

(i) David Sokoloff

Technology-rich learning provides knowledge constructed from observation rather than presented lecture-style. Students are asked to make predictions, and then check those predictions with observations. As a result, students' beliefs often change as learning progresses. The instructor becomes a guide.

Activities are based on the [Physics Suite](#), available from [Vernier](#) and [Pasco](#), and the [Real Time Physics](#) lab curriculum by Sokoloff, Thornton, and Laws.

Interactive lecture demos fit into the traditional structure of a course. This shifts development from the instructor to the class.

Alternatively, the course can be delivered on the Web. The professor is replaced by Quicktime movies. Students log in, and interact using Chat.

(ii) Pat Viele, Cornell University

If you see a good site, spread the word. Visit the [National Science Digital Library](#), and press the Recommend button. It will be checked out, and added to the database.

You should also tell the site master that you like the site.

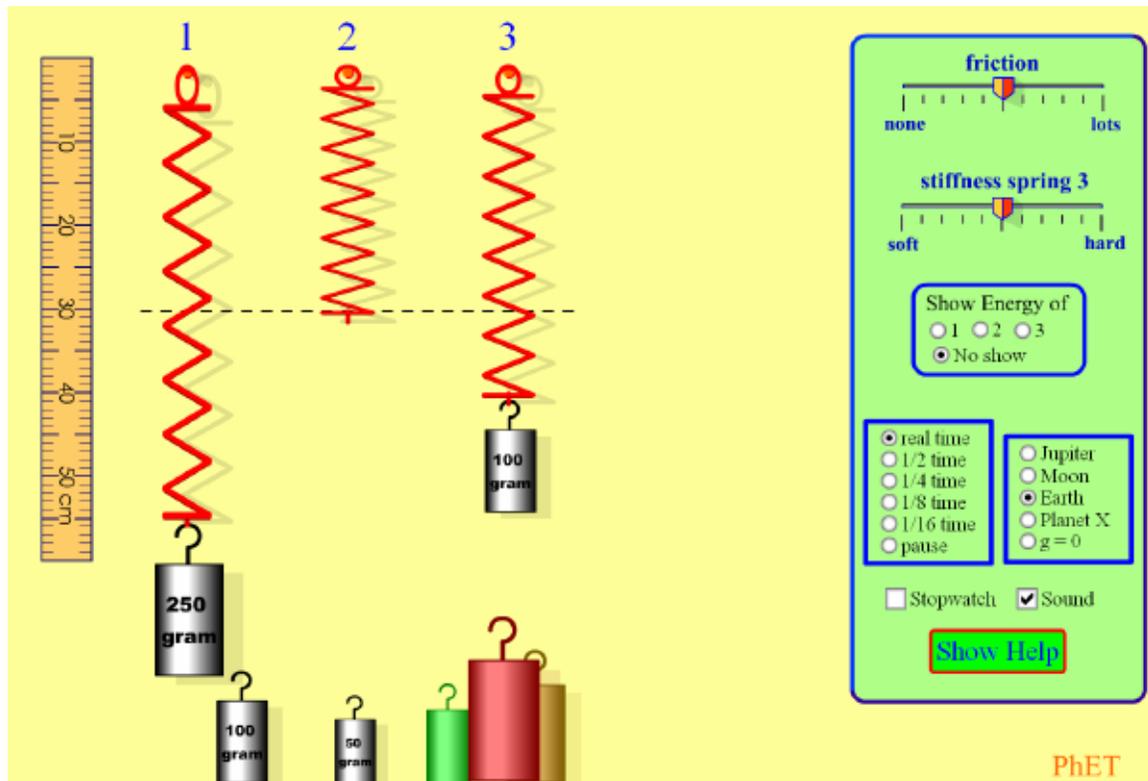
Talk to students about plagiarism beforehand. A useful site for combating plagiarism is [Turnitin](#).

Emphasize critical thinking. Train students to evaluate the quality of the information on a site. When was it last updated? What are the credentials of the creator?

(iii) Kathy Perkins et al, University of Boulder, Physics Education Technical Project

[PhET](#) is an excellent source of free, open-code, Java-based physics simulations. They are designed for ease of student use, and to engage the student in learning. Simulations can be run on-line, or downloaded for use off-line.

Sample screen shot:



(iv) Peter Sheldon: Are They Engaged?

Technology promotes active learning. Useful sites are www.merlot.org, www.iitt.org, and <http://webphysics.davidson.edu/Applets/Applets.html>.